

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT-AB05018J	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2005/003053	International filing date (day/month/year) 24.02.2005	Priority date (day/month/year) 01.03.2004	
International Patent Classification (IPC) or national classification and IPC C07H21/04, C12N15/09			
Applicant JAPAN SCIENCE AND TECHNOLOGY AGENCY			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/003053

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

international search (Rule 12.3 and 23.1(b))
 publication of the international application (Rule 12.4)
 international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-7 _____ as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

the claims:
 nos. 3-8, 10 _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* 2, 9, 14 _____ received by this Authority on 10.01.2006
 nos.* _____ received by this Authority on _____

the drawings:
 sheets _____ as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. 1, 11-13 _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/003053Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	2-10, 14	YES
	Claims		NO
Inventive step (IS)	Claims	2-10, 14	YES
	Claims		NO
Industrial applicability (IA)	Claims	2-10, 14	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: Akihiro OHKUBO et al., "A new strategy for the synthesis of oligodeoxynucleotides directed towards perfect O-selective internucleotidic bond formation without base protection," *Tetrahedron Letters*, 2004, Vol. 45, No. 2, pages 363 to 366

Document 2: Wojciech DABKOWSKI et al., "2,4-Dinitrophenol: a novel activating reagent in nucleotide synthesis via the phosphoramidite route. Design of new effective phosphorylating reagents," *Tetrahedron Letters*, 2000, Vol. 41, No. 39, pages 7535 to 7539

Document 3: JP 2003-2895 A (President of the Tokyo Institute of Technology), 08 January 2003

Document 4: JP 11-80185 A (Japan Science and Technology Corp.), 26 March 1999

Document 5: JP 2003-28871 A (Fuji Photo Film Co., Ltd.), 29 January 2003

Document 6: JP 62-51695 A (Yuki Gosei Kogyo Co., Ltd.), 06 March 1987

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/003053Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Claims 2 to 10 and 14

Documents 1 to 6 do not disclose or suggest the feature wherein a mixture that comprises an alcohol-type compound and an acid catalyst is used during the synthesis of nucleic acid oligomers by means of a phosphoramidite technique.

On the other hand, the inventions set forth in claims 2 to 10 and 14 exhibit an advantageous effect in that side reactions are suppressed and the condensation efficiency is increased as a result of using a mixture that comprises an alcohol-type compound and an acid catalyst; furthermore, it would not have been easy for a person skilled in the art to predict the effects in question based on the disclosures in documents 1 to 6.

Such being the case, the inventions set forth in claims 2 to 10 and 14 are novel and involve an inventive step in relation to the inventions disclosed in documents 1 to 6.

Supplemental Box Relating to Sequence Listing

Continuation of Box No. I, item 2:

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was established on the basis of:
 - a. type of material
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material
 in written format
 in computer readable form
 - c. time of filing/furnishing
 contained in the international application as filed
 filed together with the international application in computer readable form
 furnished subsequently to this Authority for the purposes of search and/or examination
 received by this Authority as an amendment* on _____
2. In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

* If item 4 in Box No. I applies, the listing and/or table(s) related thereto, which form part of the basis of the report, may be marked "superseded."